rewritten as newly submitted claims 25-29, which should now be found allowable.

Independent claim 1, as well as many of the claims depending therefrom, stand rejected on grounds of obviousness, based on Rehg et al in view of either of the technical articles authored by Vayenas or Yentekakis et al (collectively hereinafter "Articles"). These rejections are respectfully traversed, and in any event, are not believed to be applicable to the claims, as amended.

Claim 1 has been amended to recite the specific components of the CO removal system, and to specify the operating temperatures (0 to 800° C) that characterize the use of the system in on-board vehicle fuel cells. While the Articles describe the theory of so-called non-Faradaic electrochemical modification of catalyst activity, none recognize or suggest that this process can be advantageously used to solve the specific problem in the particular environment addressed by Applicant's invention; namely, highly robust, efficient removal of CO in hydrogen reformate fuel used in an fuel cell on board a vehicle. As pointed out in Applicant's specification, the requirements of fuel cells used to power vehicles such as conventional automobiles are particularly demanding because of the wide operating temperatures encountered, and the need to alter power output very rapidly in response to changing driving and load conditions. Applicants' CO removal system meets these demanding requirements by operating over a temperature range of 0 to 800 degrees C, and by responding to changes in power requirements in as little as one second. The references relied on by the Examiner to reject the claims, even if combined, would not yield a CO removal system that would operate over the

requisite temperature range or within the necessary response time, so as to meet the requirements of an on-board fuel cell powered automobile. It appears that the Examiner partially appreciates this distinction through his recognition of the allowable subject matter contained in claims 17-20 which recite the specific catalytic materials that make possible a rapid response system operating over a much wider temperature range compared to the prior art. Because the prior art does not recognize the benefits of the specific catalysts employed and claimed by Applicants, it is submitted that one of ordinary skill in the art would not be motivated to use the non-Faradaic process disclosed in the Articles in system disclosed in the Rehg reference. Accordingly, it is believed that claim 1 as amended, as well as the claims depending therefrom recite patentably distinguishable subject matter and should therefore be allowed.

Reconsideration is respectfully requested in view of the instant amendment and foregoing comments. A genuine effort has been made to place this case in condition for allowance and such action is therefore courteously solicited. The Commissioner is hereby authorized to charge Deposit Account No. 06-1510 any fee due as a result of this amendment. Attached hereto is a marked up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

Respectfully submitted,

Randy W. Tung (31,311)

Version With Markings To Show Changes Made

In The Claims

Cancel claims 2, 3, 5-9, 11, 13-19, 21-24.

1. (Amended) A fuel cell system, comprising:

hydrogen fuel;

a CO removal system employing [based upon] non-Faradaic electrochemical modification of catalyst activity [(electrochemical promotion)], the system including -

(a) a working electrode having a catalyst providing rapid dynamic response of the removal system over a temperature range of 0 to 800 degrees Celsius,

(b) a counter electrode,

(c) an electrolyte between the working electrode and counter electrode,

(d) a power source; and

a fuel cell stack.

4. (Amended) The fuel cell system of claim [2] 1 wherein the catalyst is a layer of material formed on the working electrode [is a catalyst deposited on the working electrode].

10. (Amended) The fuel cell system of claim [8] 1 wherein the power source [current] is a DC battery.

12. (Amended) The [CO removal] fuel cell system of [claims 3 or 4] claim 1, wherein the working electrode and the counter electrode are coupled in series with the power source, such that current flows [a current can be applied] between the working electrode and the counter electrode.

20. (Amended) The fuel cell system of claim [2] 1 wherein the [working electrode is a zeolite] catalyst is selected from the group consisting of -

(a) Cu/ZnO
(b) Cu/CuO
(c) ABO3
(d) zeolite.

25. (New) A fuel cell system, comprising:

a source of a hydrogen fuel;

a CO removal system using non-Faradaic electrochemical modification of catalyst activity, said removal system including a working electrode, an electrolyte, a counter electrode, and a power source, wherein said working electrode includes a catalyst selected from the group consisting of -

(a) Cu/ZnO

(b) Cu/CuO

(c) ABO3

(d) zeolite; and,

a fuel stack.

26. (New) The fuel cell system of claim 25 wherein said removal system provides dynamic response over a temperature range from 0 to 850 degrees Celsius.

27. (New) The fuel cell system of claim 25 wherein the catalyst is a layer of material formed on the working electrode.

28. (New) The fuel cell system of claim 25, wherein the power source is a DC battery.

29. (New) The fuel cell system of claim 25, wherein the working electrode and the counter electrode are coupled in series with the power source, such that current flows between the working electrode and the counter electrode.